

ABSTRACT OF THE DISCLOSURE

The invention includes SOI thin film transistor constructions, memory devices, computer systems, and methods of forming various structures, devices and systems. The structures typically comprise a thin crystalline layer of silicon/germanium formed over a wide range of suitable substrates. The crystalline properties of the silicon/germanium can be controlled during formation of the silicon/germanium so that the material has a relaxed crystalline lattice and large crystalline grain sizes. The crystalline grain sizes can be sufficiently large so that transistor devices formed in association with the thin crystalline material have active regions utilizing only a single grain of the silicon/germanium material. The silicon/germanium material having a relaxed crystalline lattice can be utilized alone in forming channel regions of transistor devices, or alternatively a semiconductor material having a strained crystalline lattice can be provided between the relaxed crystalline lattice and gates of the transistor devices.